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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,088	09/26/2003	Michael A. Wasserman	5681-59600	7566

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EXAMINER	
NGUYEN, HAU H	
ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/673,088	WASSERMAN ET AL.	
	Examiner	**Art Unit**	
	Hau H. Nguyen	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/09/2004*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, filed March 13, 2006, with respect to the rejection(s) of claim(s) 1-25 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 6-14, 18, 19 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable Rousseau et al. (U.S. Patent No. 5,524,075) in view of Deering et al (U.S. Patent No.6,417,861).

Referring to claim 1, Rousseau et al. teach a system for distributed convolution of stacked digital video data comprising:

a plurality of video data convolve units connected in a chain (Fig. 6C, 3416s), to compute a convolution defined by a convolution kernel of size up to 3 X 4 (Fig. 3, 170A-170D), calculate partial convolution sums for a set of the video pixels that are located within a convolution kernel, and further teach receive accumulated partial convolution sums from a prior video data convolve unit in the chain, unless the video data convolve unit is the first video data convolve unit in the chain; add the calculated partial convolution sums to the previously accumulated partial

convolution sums; and output new accumulated partial convolution sums to the next video data convolve unit in the chain, unless the video data convolve unit is the last video data convolve unit in the chain (Fig. 6C, 6H, col. 14, line 55 to col. 15, line 21, and Fig. 6J, col. 17, lines 22-27).

Although Rousseau et al. do not teach receiving video pixel from a video output of a dedicated rendering unit, this is what Deering teaches. Deering teaches video data convolve units (170A – 170D) receive pixel data from rendering units (Fig. 3, rendering unit 150A-150D). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Deering and Rousseau et al. because the system of Deering provides real time filter process and may use a number of different filter types and thus provides better flexibility to the system as taught by Deering (abstract). Therefore, at least claims 1 and 4 would have been obvious.

As per claim 2, Rousseau et al. teach at least one bus (Fig. 6J, shift input, data input, shift output, data output) to connect a video data convolve unit in the chain to the next video data convolve unit in the chain.

As per claim 3, Rousseau et al. teach the video data is converted to a digital data format utilized by the video data convolve unit (col. 4, lines 49-65).

As per claim 5, although not explicitly stated, Rousseau et al. teach a video line buffer to store lines of video pixels as illustrated as current line, previous line, and next line in Fig. 6H.

As per claim 6, as cited above, Rousseau et al. teach the video data convolve unit further comprises a convolution calculation unit that is operable to calculate partial convolution sums for the set of pixels, a partial results accumulator that is operable to add the partial convolution sums

to corresponding partial results received and to output the new accumulated partial results, and a pixel value calculator that is operable in the last video data convolve unit in the chain to determine values for a convolved pixel from the final accumulated partial sums (with reference to Figs. 6C, 6H, 6J).

Claims 7 and 8 are similar in scope to claims 1 and 2, and thus are rejected under similar rationale.

As per claims 9 and 13, Deering teaches a video blend unit that is operable to receive convolved video pixels from a prior video data convolve unit and output a stream of convolved video pixels that is a combination of the received and generated video pixels ordered by screen location (col. 32, lines 15-27).

Claims 10-12 are similar in scope to claims 1 and 2, and thus are rejected under similar rationale.

Claim 14 is similar in scope to claim 1, and thus is rejected under similar rationale.

Claims 18 and 19 are similar in scope to claims 3 and 4, and thus are rejected under similar rationale.

As per claim 21, Deering teaches each graphics rendering unit renders video pixels for primitives located anywhere in screen space (150A-150D).

Claim 22 is similar in scope to claim 1, and thus is rejected under similar rationale.

As per claim 23, although Rousseau et al. do not teach outputting the convolved video pixels to a display, Deering teaches this feature in Fig. 3.

As per claim 24, Deering teaches each rendering units renders video pixels for a different portion of screen space (150).

As per claim 25, Deering teaches frustum culling may be utilized to soft the geometric primitives by screen portions ... (col. 32, lines 15-27).

Allowable Subject Matter

4. Claims 15-17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art made of record fails to anticipate or make obvious the claimed invention. Specifically, the prior art fails to teach or suggest, in combination with the remaining elements and/or steps, further comprises specifying a different jitter value or jitter pattern and rendering pixel values for each jittered pixel ... as recited in claim 15; for the last video data convolve unit in the chain; determining parameter values ... as recited in claim 16; and the pixel data from each rendering unit are determined for primitives that are geometrically expanded in both x and y dimensions by ... as recited in claim 20.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

5/25/2006

Kee M. Tung
Primary Examiner